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09/522,117 03/02/00 CALDWELL

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EXAMINER

BALASUBRAMANIAN, V

ART UNIT

PAPER NUMBER

1624

DATE MAILED:

05/21/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/522,117

Applicant(s)

Caldwell et al.

Examiner
Venkataraman Balasubramanian

Art Unit
1624



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 2, 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-27 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

Applicants' response, which included request for reconsideration, filed on 3/21/2001 is made of record.

Claims 21-27 are now pending.

In view applicants' response, the following rejections are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldwell et al. US 5,861,423 for reasons of record. To repeat:

Caldwell et al. teaches several pyridinyl substituted olefinic amines claimed herein for the treatment of central nervous disorders. See formula shown on col. 5 and note the definition of A, A', A'', X, X', E', E'', Z', Z'' groups and value of m, n, p shown on col. 5-6. Note with the above definition of various groups, reference compounds include compound claimed herein. Note some species are shown as cis and trans forms (ie present as Z and E forms). See example 4 on col. 16 which shows N-methyl-4-3-(5-isopropoxy-pyridinyl)-3-buten-1 amine.

While said compound doesn't anticipate the scope of claims 21-27, they are very closely related, being homologs of compounds i.e. instant pentene vs butene of the reference. However,

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homologs and compounds that differ only by a CH_2 are not deemed patentably distinct absent evidence of superior or unexpected properties. In re Wood 199 USPQ 137; In re Lohr 137 USPQ 548. Thus it would have been obvious to one skilled in the art at the time of the invention was made to expect instant compounds to possess the utility taught by the applied art in view of the close structural similarity outlined above.

Applicants argument to overcome this rejection is fully considered but deemed to be not persuasive.

Contrary to applicants' urging that a prima facie case of obviousness has not been established, examiner has clearly established a prima facie case of obviousness. First of all, applicants attention is directed the structural formula on col. 5 and further the exemplified compound in example 4. The instant compound differs from the reference compound being a pentene vs butene.

Pentene and butene are indeed homologs, next adjacent homolog and this a fact. The above 103 rejection is based on this fact. Prior art and text books of organic chemistry have not raised any doubt whether pentene and butene are homolog or not. Furthermore, applicants' argument by citing the case laws, by no means, address the issue whether pentene and butene should be deemed as homologs or not. For lack of any contrary evidence that pentene and butene are not homologs, there is definitely a prima facie case. Since pentene and butene are next adjacent homologs, one trained in the art would have the expectation that homologs behave similarly and would have the same utility. One trained in the art would be motivated to make the instant pentene compound based on

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the structural similarity . Therefore, criteria for 103 rejection is fully met with in the above 103 rejection. As for case laws cited the following apply.

Homology not established

Applicants' citation of *Ex parte Burtner* is fully considered but not deemed to be persuasive. The facts in the case were that the reference taught a hydroxy group substituted directly on the carbon rather than through an alkylene as required by the claims. However, *Burtner* is not on point in the instant case because the methyl group is substituted on the alkylene chain, i.e. the instant case deals with a straight vs branched chain situation. The instant claims does not deal with alcohols or esters, which were the fact situations in the cited case.

Applicants' citation of *Ex parte Thompson* is fully considered, however, *Thompson* is not deemed to be on point in the instant case. As indicated by the applicants, the facts in the case were a trimethylenedioxybenzene vs dimethylenedioxybenzene, which is significantly different from the instant scenario. Thompson dealt with cyclic compounds not acyclic compounds as present in the instant case.

Applicants further cite *Ex parte Koo* and argues that there is low predictability of activity in CNS-active compounds art. *Koo* is not on point because the case dealt with pyridinyl vs prior art phenyl group which is far removed from the instant situation(i.e. the case deals with replacing a ring carbon with a hetero atom -a nitrogen for equivalency).

B. Obviousness does not stem from homology

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As explained in the rejection, the instant compounds are homologous to the reference compounds. Applicants' citation of *In re Mills* is fully considered but is not persuasive as Mills is not on point. Note the fact situation in Mills is a C₈-C₁₂ alkyl in the reference vs C₁-C alkyl in the claims and the court held these two were widely spread unlike the *Henze* case which dealt with **an adjacent homologue**. Similarly, the court remarks in *Langer* also are with respect to sterically hindered amines as opposed to unhindered amines, and thus the facts are remote from the instant case.

C. The claimed compounds show unexpected results over the reference compounds

Contrary to applicants' urging, the claimed compounds do not show any unexpected results. First of all as noted above, specification has no comparative study with closest prior art compound to show any unexpected/ superior properties. Applicants merely compares, as seen in the remarks, with prior art compound- an lower adjacent homologue. There is no assertion that the experimental conditions are the same, though both the reference and instant specification rely on earlier patent. Variation in experimental data within experiments and between experiments in such assays are known and expected. Applicants have not provided any statistical analysis to show any of the variation between the instant compounds and the reference compound is significant.

Furthermore, whereas instant compound shows a K_i of 10 nM, the reference compound shows K_i of 6 nM which is considered to be marginal. Again contrary to applicants urging, this is not an unexpected result. One trained in the art would expect such a variation and is evident both from Table I of Caldwell as well as results of testing shown in the instant specification. Both the reference compound and the instant compounds are useful for the same utility. Applicants have no

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showing that such a variation critically affect the utility recited. Again, variation in the EC_{50} value, instant 100 nM vs 51 nm of Caldwell is not shown or asserted to be a critical limitation that offers the instant compound any superior property in terms of the utility recited. Also despite the variation in the EC_{50} value, both instant compounds and reference compound have the same E_{max} value of 100 which would mean that they would have the same effect on the utility recited.

Thus there is no unexpected or superior properties in the results of the testing.

Hence the rejection is proper and is maintained.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 21-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No. 08/631,761. Although the conflicting claims are not identical, they are not patentably distinct from each other because subject matter embraced herein is also embraced in the copending application 08/631,761.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 21-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No.09/570,226. Although the conflicting claims are not identical, they are not patentably distinct from each other because subject matter embraced herein is also embraced in the copending application 09/570,226.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (703) 305-1674. The examiner can normally be reached on Monday through Thursday from 8.00 AM to 5.00 PM.

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The fax phone number for the organization where this application or proceeding is assigned
(703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is (703) 308-1235.

VB

V. Balasubramanian (Bala)

5/17/2001

Mukund J. Shah

MUKUND J. SHAH

SUPERVISORY PATENT EXAMINER

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